

**IN THE CLAIMS:**

Claim 1 has been amended as follows:

1. (Currently Amended) An acoustic gas analyzer comprising:

an acoustic velocity meter disposed and adapted to interact with a gas to be analyzed by emitting acoustic energy into the gas and detecting said acoustic energy after transmission through the gas, said acoustic velocity meter emitting a first output dependent on the detected transmission of the acoustic energy through the gas at a detection time;

a temperature probe, ~~having a probe time constant~~, disposed and adapted to interact with the gas to measure a temperature of the gas, and emitting a second output indicative of the a measured temperature of the gas, said temperature probe having a probe time constant that causes said measured temperature to represent a temperature of the gas at a time that does not coincide with said detection time;

a signal processor supplied with said first output for producing, from said first output, a temporally-adapted first output dependent on the probe time constant that represents a temperature of the gas at the detection time;  
and

a calculation unit supplied with said temporally adapted first output and with said second output for determining compositional information of the gas from said temporally-adapted first output and said second output.

2. (Original) An acoustic gas analyzer as claimed in claim 1 wherein said first output has an amplitude, and wherein said signal processor comprises a filter

arrangement supplied with said first output for producing a time-dependent variation of the amplitude of the first output, dependent on said probe time constant, to produce said temporally-adapted first output.

3. (Original) An acoustic gas analyzer as claimed in claim 2 wherein said filter arrangement comprises a recursive filter having a filter constant that is substantially equal to the probe time constant.

4. (Original) An acoustic gas analyzer as claimed in claim 3 wherein said recursive filter is a digital filter.